

FACT SHEET

as required by LAC 33:IX.3111 for major LPDES facilities, for draft **Louisiana Pollutant Discharge Elimination System Permit No. LA0033260; AI 19536; PER20090001** to discharge to waters of the State of Louisiana as per LAC 33:IX.2311.

The **permitting authority** for the Louisiana Pollutant Discharge Elimination System (LPDES) is:

Louisiana Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

- I. **THE APPLICANT IS:** Town of Jena
Jena/LaSalle Regional Wastewater Treatment Plant
P.O. Box 26
Jena, LA 71342
- II. **PREPARED BY:** Eura DeHart
- DATE PREPARED:** April 20, 2010
- III. **PERMIT ACTION:** reissue LPDES permit LA0033260, AI 19536; PER20090001
- LPDES application received: July 9, 2009
- EPA has not retained enforcement authority.
- LPDES permit issued: November 17, 2004
LPDES permit expired: December 31, 2009

IV. **FACILITY INFORMATION:**

- A. The application is for the discharge of treated sanitary wastewater from a publicly owned treatment works serving the Town of Jena and LaSalle Water and Sewer District No. 1.
- B. The permit application does not indicate the receipt of industrial wastewater. The facility will accept sewage sludge.
- C. The facility is located on 441 East Bradford Street in Jena, LaSalle Parish.
- D. The treatment facility consists of a bar screen and grit removal chamber, oxidation ditch with boat clarifier, and aeration basin. Disinfection is by UV.
- E. Outfall 001

Discharge Location: Latitude 31° 40' 38" North
Longitude 92° 07' 48" West

Description: treated sanitary wastewater

Design Capacity: 1.4 MGD

Type of Flow Measurement which the facility is currently using:

Parshall Flume and Continuous Recorder

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V. RECEIVING WATERS:

The discharge is into West Prong Hemphill Creek, thence into Hemphill Creek, thence into Catahoula Lake in segment 081609 of the Ouachita River Basin. This segment is listed on the 303(d) list of impaired waterbodies.

The **critical low flow** (7Q10) of West Prong Hemphill Creek is 1.35 cfs.

The **hardness value** is 25 mg/l and the **fifteenth percentile value for TSS** is 3.2 mg/l.

The designated uses and degree of support for Segment 081609 of the Ouachita River Basin are as indicated in the table below^{1/}:

Degree of Support of Each Use						
Primary Contact Recreation	Secondary Contact Recreation	Propagation of Fish & Wildlife	Outstanding Natural Resource Water	Drinking Water Supply	Shell fish Propagation	Agriculture
Not Supported	Full	Not Supported	N/A	N/A	N/A	N/A

^{1/}The designated uses and degree of support for Segment 081609 of the Ouachita River Basin are as indicated in LAC 33:IX.1123.C.3, Table (3) and the 2006 Water Quality Management Plan, Water Quality Inventory Integrated Report, Appendix A, respectively.

VI. ENDANGERED SPECIES:

The receiving waterbody, Subsegment 081609 of the Ouachita River Basin, is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U. S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated January 5, 2010 from Rieck (FWS) to Nolan (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

VII. HISTORIC SITES:

The discharge is from an existing facility location, which does not include an expansion beyond the existing perimeter. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the 'Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits' no consultation with the Louisiana State Historic Preservation Officer is required.

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VIII. PUBLIC NOTICE:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List

For additional information, contact:

Mr. Eura DeHart
Water Permits Division
Department of Environmental Quality
Office of Environmental Services
P. O. Box 4313
Baton Rouge, Louisiana 70821-4313

IX. PROPOSED PERMIT LIMITS:

Subsegment 081609, Hemphill Creek – Headwaters to Catahoula Lake (includes Hair Creek), is listed on LDEQ's Final 2006 303(d) list as impaired for fecal coliform. A reopener clause will be established in the permit to allow for the requirement of more stringent effluent limitations and requirements as imposed by a future TMDL. Until completion of TMDLs for the Ouachita River Basin, those suspected causes for impairment which are not directly attributed to the sanitary wastewater point source category have been eliminated in the formulation of effluent limitations and other requirements of this permit. Additionally, suspected causes of impairment which could be attributed to pollutants which were not determined to be discharged at a level which would cause, have the reasonable potential to cause or contribute to an excursion above any present state water quality standard were also eliminated.

Fecal Coliform

To protect the receiving waterbody against high levels of pathogenic organisms, fecal coliform limitations have been established in the permit.

Subsegment 081609 was previously listed as impaired for mercury on past 303(d) lists, for which the below TMDL has been developed. The Department of Environmental Quality reserves the right to impose more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional TMDLs and/or water quality studies. The DEQ also reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDLs for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as necessary to achieve compliance with water quality standards.

The following TMDL has been established for subsegment 081609:

Mercury TMDLs for Little River and Catahoula Lake Watershed, February 2003

The TMDL shows that "99.5% of the mercury load to the watershed is from non-point air emission sources. Because point point sources are a relatively small portion of the total mercury load to the system, no reductions in point sources loads are required in this TMDL."

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The permit for the Town of Jena contains a Water Quality Based Limit of 0.0005 lbs/day (monthly average) and 0.0013 lbs/day (daily maximum) for mercury.

OUTFALL 001

A three year compliance schedule has been placed into the permit to attain compliance with the Whole Effluent Toxicity (WET) limit.

Interim Effluent Limits:

All parameters are the same as the Final Effluent Limits (below), except there is no WET limit for 3 years.

Final Effluent Limits:

Final limits shall become effective three years after the effective date of the permit and expire on the expiration date of the permit.

Effluent Characteristic	Monthly Avg. (lbs./day)	Monthly Avg.	Weekly Avg.	Basis
CBOD ₅	117	10 mg/l	15 mg/l	Limits are set in accordance with the Statewide Sanitary Effluent Limitations Policy (SSELP) for facilities of this treatment type and size.
TSS	175	15 mg/l	23 mg/l	Since there is no numeric water quality criterion for TSS, and in accordance with the current Water Quality Management Plan, the TSS effluent limitations shall be based on a case-by-case evaluation of the treatment technology being utilized at a facility. Therefore, a Technology Based Limit has been established through Best Professional Judgement for the type of treatment technology utilized at this facility.
Ammonia-Nitrogen	70	6 mg/l	12 mg/l	Limits are set based on the effluent limits established in the previous permit. Limitations are equivalent to meeting 4.0 mg/l ammonia at the edge of the mixing zone.

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Priority Pollutants

Effluent Characteristics	Monthly Avg. (lbs./day)	Daily Maximum (lbs./day)	Basis
Total Copper	0.0625	0.1483	Water Quality Based Limit
Total Mercury	0.0005	0.0013	Water Quality Based Limit
Total Zinc	0.5096	1.2098	Water Quality Based Limit

Other Effluent Limitations:**1) Fecal Coliform**

The discharge from this facility is into a water body which has a designated use of Primary Contact Recreation. According to LAC 33:IX.1113.C.5.b.i, the fecal coliform standards for this water body are 200/100 ml and 400/100 ml. Therefore, the limits of 200/100 ml (Monthly Average) and 400/100 ml (Weekly Average) are proposed as Fecal Coliform limits in the permit. These limits are being proposed through Best Professional Judgement in order to ensure that the water body standards are not exceeded, and due to the fact that existing facilities have demonstrated an ability to comply with these limitations using present available technology.

2) pH

According to LAC 33:IX.3705.A.1., POTW's must treat to at least secondary levels. Therefore, in accordance with LAC 33:IX.5905.C., the pH shall not be less than 6.0 standard units nor greater than 9.0 standard units at any time.

3) Solids and Foam

There shall be no discharge of floating solids or visible foam in other than trace amounts in accordance with LAC 33:IX.1113.B.7.

4) Toxicity Characteristics

In accordance with EPA's Region 6 Post-Third Round Toxics Strategy, permits issued to treatment works treating domestic wastewater with a flow (design or expected) greater than or equal to 1 MGD shall require biomonitoring at some frequency for the life of the permit or where available data show reasonable potential to cause lethality, the permit shall require a whole effluent toxicity (WET) limit (*Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards*, April 16, 2008, Version 6).

Whole effluent biomonitoring is the most direct measure of potential toxicity which incorporates the effects of synergism of the effluent components and receiving stream water quality characteristics. Biomonitoring of the effluent is, therefore, required as a condition of this permit to assess potential toxicity. LAC 33:IX.1121.B.3. provides for the use of biomonitoring to monitor the effluent for protection of State waters. The biomonitoring procedures stipulated as a condition of this permit are as follows:

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The permittee shall submit the results of any biomonitoring testings performed in accordance with the LPDES Permit No. LA0033260, **Biomonitoring Section** for the organisms indicated below.

TOXICITY TESTSFREQUENCY

Chronic static renewal 7-day definitive test
using Ceriodaphnia dubia

1/quarter

Chronic static renewal 7-day definitive test
using Pimephales promelas

1/quarter

Dilution Series - The permit requires five (5) dilutions in addition to the control (0% effluent) to be used in the toxicity tests. These additional concentrations shall be 26%, 35%, 46%, 62%, and 82%. The critical biomonitoring dilution and WET limit is defined as 62% effluent. The critical dilution is calculated in Appendix B-1 of this fact sheet. Results of all dilutions shall be documented in a full report according to the test method publication mentioned in the **Biomonitoring Section** under Whole Effluent Toxicity. This full report shall be submitted to the Office of Environmental Compliance as contained in the Reporting Paragraph located in the **Biomonitoring Section** of the permit.

This facility has experienced several lethal and sub-lethal biomonitoring test failures during the previous permit cycle. A reasonable potential analysis also shows that reasonable potential for future lethal and sub-lethal toxicity exists for the Town of Jena - Jena/LaSalle Regional WWTP. LDEQ does not recommend a Whole Effluent Toxicity (WET) Limit be implemented immediately upon permit reissuance. Rather, LDEQ recommends that a three year compliance schedule be incorporated into LA0033260. The purpose of this compliance schedule is to attain compliance with the WET limit. After this three year period expires, the WET limit stated in Part I of LA0033260 shall become effective.

The permit may be reopened to require effluent limits, additional testing, and/or other appropriate actions to address toxicity if biomonitoring data show actual or potential ambient toxicity to be the result of the permittee's discharge to the receiving stream or water body. Modification or revocation of the permit is subject to the provisions of LAC 33:IX.2383. Accelerated or intensified toxicity testing may be required in accordance with Section 308 of the Clean Water Act.

X. PREVIOUS PERMIT:

LPDES Permit No. LA0033260: Issued: November 17, 2004
Expired: December 31, 2009

<u>Effluent Characteristic</u>	<u>Discharge Limitations</u>		<u>Monitoring Requirements</u>	
	<u>Monthly Avg.</u>	<u>Weekly Avg.</u>	<u>Measurement</u>	<u>Sample</u>
Flow	Report	Report	<u>Frequency</u> Continuous	<u>Type</u> Recorder
CBOD ₅	10 mg/l	15 mg/l	2/month	6 Hr. Composite
TSS	15 mg/l	23 mg/l	2/month	6 Hr. Composite
Ammonia-Nitrogen	6 mg/l	12 mg/l	2/month	6 Hr. Composite
Fecal Coliform Colonies	200	400	2/month	Grab
pH	6.0 (min)	9.0(max)	2/month	Grab
Total Copper	0.206 lbs/day	0.490 lbs/day	1/quarter	24 Hr. Composite
Total Mercury	0.00048 lbs/day	0.0011 lbs/day	1/quarter	24 Hr. Composite
Total Zinc	1.619 lbs/day	3.842 lbs/day	1/quarter	24 Hr. Composite

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The permit contains biomonitoring.

The permit contains pollution prevention language.

XI. ENFORCEMENT AND SURVEILLANCE ACTIONS:**A) Inspections**

Facility Inspection, April 7, 2009 (EDMS Document No. 41936805)

B) Compliance and/or Administrative Orders

Consolidated Compliance Order & Notice of Potential Penalty (Enforcement Tracking No. WE-CN-08-0558, January 13, 2009 (EDMS Document No. 39802357)

C) DMR Review

Permit violations are noted in the attached ICIS-NPDES Report for the monitoring period of January 1, 2008 to December 31, 2009.

<u>Parameter</u>	<u># of numeric violations</u>
Mercury	5
Fecal Coliform	3
Zinc	2
BOD	1

Based on the compliance issues found during the compliance review, this facility was referred to the Enforcement Division on March 1, 2010.

XII. ADDITIONAL INFORMATION:

This permit may be modified, or alternatively, revoked and reissued, to comply with any applicable effluent standard or limitations issued or approved under sections 301(b)(2)(C) and (D); 304(b)(2); and 307(a)(2) of the Clean Water Act or more stringent discharge limitations and/or additional restrictions in the future to maintain the water quality integrity and the designated uses of the receiving water bodies based upon additional water quality studies and/or TMDLs, if the effluent standard, limitations, water quality studies or TMDL's so issued or approved:

- a) Contains different conditions or is otherwise more stringent than any effluent limitation in the permit; or
- b) Controls any pollutant not limited in the permit; or
- c) Requires reassessment due to change in 303(d) status of waterbody; or
- d) Incorporates the results of any total maximum daily load allocation, which may be approved for the receiving water body.

The Louisiana Department of Environmental Quality (LDEQ) reserves the right to modify or revoke and reissue this permit based upon any changes to established TMDLs for this discharge, or to accommodate for pollutant trading provisions in approved TMDL watersheds as necessary to achieve compliance with water quality standards. Therefore, prior to upgrading or expanding this facility, the permittee should contact the Department to determine the status of the work being done to establish future effluent limitations and additional permit conditions.

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Final effluent loadings (i.e. lbs/day) have been established based upon the permit limit concentrations and the design capacity of 1.4 MGD.

Effluent loadings are calculated using the following example:

BOD: $8.34 \text{ lb/gal} \times 1.4 \text{ MGD} \times 10 \text{ mg/l} = 117 \text{ lbs/day}$

At present, the **Monitoring Requirements, Sample Types, and Frequency of Sampling** as shown in the permit are the same as the previous permit and are as follows:

Effluent CharacteristicsMonitoring Requirements

	<u>Measurement</u>	<u>Sample</u>
	<u>Frequency</u>	<u>Type</u>
Flow	Continuous	Recorder
CBOD ₅	2/month	6 Hr. Composite
Total Suspended Solids	2/month	6 Hr. Composite
Ammonia-Nitrogen	2/month	6 Hr. Composite
Fecal Coliform Bacteria	2/month	Grab
pH	2/month	Grab
Copper	1/quarter	24-Hr. Composite
Mercury	1/quarter	24-Hr. Composite
Zinc	1/quarter	24-Hr. Composite
Biomonitoring		
<u>Ceriodaphnia dubia</u>	1/quarter	24 Hr. Composite
<u>Pimephales promelas</u>	1/quarter	24 Hr. Composite

Compliance Schedule

Interim limits are proposed for this facility to allow the facility time to achieve compliance with the WET limit for biomonitoring.

The permittee shall achieve compliance with the FINAL EFFLUENT LIMITATIONS and MONITORING REQUIREMENTS as specified in accordance with the following schedule:

ACTIVITY	DATE
Achieve Interim Effluent Limitations and Monitoring Requirements	Effective date of permit
Achieve Final Effluent Limitations and Monitoring Requirements	3 years from the effective date of the permit

The permittee shall achieve compliance with the final effluent limitations specified for **whole effluent toxicity limits** within three years of the effective date of this permit

The permittee shall initiate and continue ongoing activities designed to achieve sustained compliance with final effluent limitations for **whole effluent toxicity limits** no later than three years after the effective date of this permit.

The permittee shall submit a progress report outlining the status of the activities on a yearly basis (from the effective date of the permit) until the final whole effluent toxicity (WET) limitations are effective.

No later than fourteen calendar days following the date for compliance for **whole effluent toxicity limits** the permittee shall submit a written notice of compliance or noncompliance.

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Pretreatment Requirements

Based upon consultation with LDEQ pretreatment personnel, general pretreatment language will be used due to the lack of either an approved or required pretreatment program.

Pollution Prevention Requirements

The permittee shall institute or continue programs directed towards pollution prevention. The permittee shall institute or continue programs to improve the operating efficiency and extend the useful life of the facility. The permittee will complete an annual Environmental Audit Report **each year** for the life of this permit according to the schedule below. The permittee will accomplish this requirement by completing an Environmental Audit Form which has been attached to the permit. All other requirements of the Municipal Wastewater Pollution Prevention Program are contained in Part II of the permit.

The audit evaluation period is as follows:

Audit Period Begins	Audit Period Ends	Audit Report Completion Date
Effective Date of Permit	12 Months from Audit Period Beginning Date	3 Months from Audit Period Ending Date

XIII. TENTATIVE DETERMINATION:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to reissue a permit for the discharge described in this Fact Sheet.

XIV. REFERENCES:

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 8, "Wasteload Allocations / Total Maximum Daily Loads and Effluent Limitations Policy," Louisiana Department of Environmental Quality, 2009.

Louisiana Water Quality Management Plan / Continuing Planning Process, Vol. 5, "Water Quality Inventory Section 305(b) Report," Louisiana Department of Environmental Quality, 2006.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Chapter 11 - "Louisiana Surface Water Quality Standards," Louisiana Department of Environmental Quality, 2009.

Louisiana Administrative Code, Title 33 - Environmental Quality, Part IX - Water Quality Regulations, Subpart 2 - "The LPDES Program," Louisiana Department of Environmental Quality, 2009.

Low-Flow Characteristics of Louisiana Streams, Water Resources Technical Report No. 22, United States Department of the Interior, Geological Survey, 1980.

Index to Surface Water Data in Louisiana, Water Resources Basic Records Report No. 17, United States Department of the Interior, Geological Survey, 1989.

LPDES Permit Application to Discharge Wastewater, Town of Jena, Jena/LaSalle Regional Wastewater Treatment Plant, Received July 9, 2009.

APPENDIX B-1, LA0033260, AI No. 19536

Documentation and Explanation of Water Quality Screen
and Associated Lotus Spreadsheet

Each reference column is marked by a set of parentheses enclosing a number and asterisk, for example (*1) or (*19). These columns represent inputs, existing data sets, calculation points, and results for determining Water Quality Based Limits for an effluent of concern. The following represents a summary of information used in calculating the water quality screen:

Receiving Water Characteristics:

Receiving Water: West Prong Hemphill Creek
Critical Flow, Qrc (cfs): 1.35
Harmonic Mean Flow, Qrh (cfs):
Segment No.: 081609
Receiving Stream Hardness (mg/L): 25
Receiving Stream TSS (mg/L): 3.2
MZ Stream Factor, Fs: 1
Plume distance, Pf: N/A

Effluent Characteristics:

Company: Town of Jena
Facility flow, Qe (MGD): 1.4
Effluent Hardness: N/A
Effluent TSS: N/A
Pipe/canal width, Pw: N/A
Permit Number: LA0033260

Variable Definition:

Qrc, critical flow of receiving stream, cfs
Qrh, harmonic mean flow of the receiving stream, cfs
Pf = Allowable plume distance in feet, specified in LAC 33.IX.1115.D
Pw = Pipe width or canal width in feet
Qe, total facility flow, MGD
Fs, stream factor from LAC.IX.33.11 (1 for harmonic mean flow)
Cu, ambient concentration, ug/L
Cr, numerical criteria from LAC.IX.1113, Table 1
WLA, wasteload allocation
LTA, long term average calculations
WQBL, effluent water quality based limit
ZID, Zone of Initial Dilution in % effluent
MZ, Mixing Zone in % effluent

Formulas used in aquatic life water quality screen (dilution type WLA):
Streams:

$$\text{Dilution Factor} = \frac{Q_e}{(Q_{rc} \times 0.6463 \times F_s + Q_e)}$$

$$\text{WLA a,c,h} = \frac{\text{Cr}}{\text{Dilution Factor}} - \frac{(F_s \times Q_{rc} \times 0.6463 \times C_u)}{Q_e}$$

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Static water bodies (in the absence of a site specific dilution):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8) P_w \pi^{1/2}}{P_f}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(P_w^{1/2})}{(P_f)^{1/2}}$$

$$WLA = \frac{(Cr-Cu) P_f}{(2.8) P_w \pi^{1/2}}$$

$$WLA = \frac{(Cr-Cu) P_f^{1/2}}{2.38 P_w^{1/2}}$$

Formulas used in human health water quality screen, human health non-carcinogens (dilution type WLA):

Streams:

$$\text{Dilution Factor} = \frac{Q_e}{(Q_{rc} \times 0.6463 + Q_e)}$$

$$WLA_{a,c,h} = \frac{Cr}{\text{Dilution Factor}} - \frac{(Q_{rc} \times 0.6463 \times Cu)}{Q_e}$$

Formulas used in human health water quality screen, human health carcinogens (dilution type WLA):

$$\text{Dilution Factor} = \frac{Q_e}{(Q_{rh} \times 0.6463 + Q_e)}$$

$$WLA_{a,c,h} = \frac{Cr}{\text{Dilution Factor}} - \frac{(Q_{rh} \times 0.6463 \times Cu)}{Q_e}$$

Static water bodies in the absence of a site specific dilution (human health carcinogens and human health non-carcinogens):

Discharge from a pipe:

$$\text{Critical Dilution} = \frac{(2.8) P_w \pi^{1/2}}{P_f}$$

Discharge from a canal:

$$\text{Critical Dilution} = \frac{(2.38)(P_w^{1/2})}{(P_f)^{1/2}}$$

$$WLA = \frac{(Cr-Cu) P_f^*}{(2.8) P_w \pi^{1/2}}$$

$$WLA = \frac{(Cr-Cu) P_f^{1/2*}}{2.38 P_w^{1/2}}$$

* P_f is set equal to the mixing zone distance specified in LAC 33:IX.1115 for the static water body type, i.e., lake, estuary, Gulf of Mexico, etc.

If a site specific dilution is used, WLA are calculated by subtracting C_u from C_r and dividing by the site specific dilution for human health and aquatic life criteria.

$$WLA = \frac{(Cr-Cu)}{\text{site specific dilution}}$$

Longterm Average Calculations:

$$LTAa = WLAa \times 0.32$$

$$LTAc = WLAc \times 0.53$$

$$LTAh = WLAh$$

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WQBL Calculations:

Select most limiting LTA to calculate daily max and monthly avg WQBL

If aquatic life LTA is more limiting:

Daily Maximum = $\text{Min}(\text{LTAA}, \text{LTAc}) \times 3.11$

Monthly Average = $\text{Min}(\text{LTAc}, \text{LTAc}) \times 1.31$

If human health LTA is more limiting:

Daily Maximum = $\text{LTAh} \times 2.38$

Monthly Average = LTAh

Mass Balance Formulas:

mass (lbs/day): $(\text{ug/L}) \times 1/1000 \times (\text{flow, MGD}) \times 8.34 = \text{lbs/day}$

concentration(ug/L): $\frac{\text{lbs/day}}{(\text{flow, MGD}) \times 8.34 \times 1/1000} = \text{ug/L}$

The following is an explanation of the references in the spreadsheet.

- (*1) Parameter being screened.
- (*2) Instream concentration for the parameter being screened in ug/L. In the absence of accurate supporting data, the instream concentration is assumed to be zero (0).
- (*3) Monthly average effluent or technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (*4) Daily maximum technology value in concentration units of ug/L or mass units of lbs/day. Units determined on a case-by-case basis as appropriate to the particular situation.
- (*5) Minimum analytical Quantification Levels (MQL's). Established in a letter dated January 27, 1994 from Wren Stenger of EPA Region 6 to Kilren Vidrine of LDEQ and from the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". The applicant must test for the parameter at a level at least as sensitive as the specified MQL. If this is not done, the MQL becomes the application value for screening purposes if the pollutant is suspected to be present on-site and/or in the waste stream. Units are in ug/l or lbs/day depending on the units of the effluent data.
- (*6) States whether effluent data is based on 95th percentile estimation. A "1" indicates that a 95th percentile approximation is being used, a "0" indicates that no 95th percentile approximation is being used.
- (*7) 95th percentile approximation multiplier (2.13). The constant, 2.13, was established in memorandum of understanding dated October 8, 1991 from Jack Ferguson of Region 6 to Jesse Chang of LDEQ and included in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". This value is screened against effluent Water Quality Based Limits established in columns (*18) - (*21). Units are in ug/l or lbs/day depending on the units of the measured effluent data.
- (*8) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, acute criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness Dependent Criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(1.1280[\ln(\text{hardness})] - 1.6774)}$
Chromium III	$e^{(0.8190[\ln(\text{hardness})] + 3.6880)}$
Copper	$e^{(0.9422[\ln(\text{hardness})] - 1.3884)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 1.4600)}$

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Nickel	$e^{(0.8460[\ln(\text{hardness})] + 3.3612)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.8604)}$

Dissolved to Total Metal Multipliers for Freshwater Streams (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Arsenic	$1 + 0.48 \times \text{TSS}^{-0.73} \times \text{TSS}$
Cadmium	$1 + 4.00 \times \text{TSS}^{-1.13} \times \text{TSS}$
Chromium III	$1 + 3.36 \times \text{TSS}^{-0.93} \times \text{TSS}$
Copper	$1 + 1.04 \times \text{TSS}^{-0.74} \times \text{TSS}$
Lead	$1 + 2.80 \times \text{TSS}^{-0.80} \times \text{TSS}$
Mercury	$1 + 2.90 \times \text{TSS}^{-1.14} \times \text{TSS}$
Nickel	$1 + 0.49 \times \text{TSS}^{-0.57} \times \text{TSS}$
Zinc	$1 + 1.25 \times \text{TSS}^{-0.70} \times \text{TSS}$

Dissolved to Total Metal Multipliers for Marine Environments (TSS dependent):

<u>Metal</u>	<u>Multiplier</u>
Copper	$1 + (10^{4.86} \times \text{TSS}^{-0.72} \times \text{TSS}) \times 10^{-6}$
Lead	$1 + (10^{6.06} \times \text{TSS}^{-0.85} \times \text{TSS}) \times 10^{-6}$
Zinc	$1 + (10^{5.36} \times \text{TSS}^{-0.52} \times \text{TSS}) \times 10^{-6}$

If a metal does not have multiplier listed above, then the dissolved to total metal multiplier shall be 1.

- (*9) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, freshwater (FW) or marine water (MW) (whichever is applicable) aquatic life protection, chronic criteria. Units are specified. Some metals are hardness dependent. The hardness of the receiving stream shall generally be used, however a flow weighted hardness may be determined in site-specific situations. Dissolved metals are converted to Total metals using partition coefficients in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Similar to hardness, the TSS of the receiving stream shall generally be used, however, a flow weighted TSS may be determined in site-specific situations.

Hardness dependent criteria:

<u>Metal</u>	<u>Formula</u>
Cadmium	$e^{(0.7852[\ln(\text{hardness})] - 3.4900)}$
Chromium III	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$
Copper	$e^{(0.6545[\ln(\text{hardness})] - 1.3860)}$
Lead	$e^{(1.2730[\ln(\text{hardness})] - 4.7050)}$
Nickel	$e^{(0.8460[\ln(\text{hardness})] + 1.1645)}$
Zinc	$e^{(0.8473[\ln(\text{hardness})] + 0.7614)}$

Dissolved to total metal multiplier formulas are the same as (*8), acute numerical criteria for aquatic life protection.

- (*10) LAC 33.IX.1113.C.6, Table 1, Numerical Criteria for Specific Toxic Substances, human health protection, drinking water supply (HHDW), non-drinking water supply criteria (HHNDW), or human health non-primary contact recreation (HHNPCR) (whichever is applicable). A DEQ and EPA approved Use Attainability Analysis is required before HHNPCR is used, e.g., Monte Sano Bayou. Units are specified.
- (*11) C if screened and carcinogenic. If a parameter is being screened and is carcinogenic a "C" will appear in this column.
- (*12) Wasteload Allocation for acute aquatic criteria (WLAa). Dilution type WLAa is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the acute aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAa formulas for streams:
- $$\text{WLAa} = (\text{Cr/Dilution Factor}) - \frac{(\text{Fs} \times \text{Qrc} \times 0.6463 \times \text{Cu})}{\text{Qe}}$$

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Dilution WLAa formulas for static water bodies:

$$WLAa = (Cr - Cu) / \text{Dilution Factor}$$

Cr represents aquatic acute numerical criteria from column (*8).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*13) Wasteload Allocation for chronic aquatic criteria (WLAc). Dilution type WLAc is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the chronic aquatic numerical criteria for that parameter. Units are in ug/L. Dilution WLAc formula:

$$WLAc = (Cr / \text{Dilution Factor}) - \frac{(Fs \times Q_{rc} \times 0.6463 \times Cu)}{Q_e}$$

Dilution WLAc formulas for static water bodies:

$$WLAc = (Cr - Cu) / \text{Dilution Factor}$$

Cr represents aquatic chronic numerical criteria from column (*9).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*14) Wasteload Allocation for human health criteria (WLAh). Dilution type WLAh is calculated in accordance with the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards". Negative values indicate that the receiving water is not meeting the human health numerical criteria for that parameter. Units are in ug/L. Dilution WLAh formula:

$$WLAh = (Cr / \text{Dilution Factor}) - \frac{(Fs \times Q_{rc, Q_{rh}} \times 0.6463 \times Cu)}{Q_e}$$

Dilution WLAh formulas for static water bodies:

$$WLAh = (Cr - Cu) / \text{Dilution Factor}$$

Cr represents human health numerical criteria from column (*10).

If Cu data is unavailable or inadequate, assume Cu=0.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*15) Long Term Average for aquatic numerical criteria (LTAA). WLAa numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.32. $WLAa \times 0.32 = LTAA$.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*16) Long Term Average for chronic numerical criteria (LTAc). WLAc numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 0.53. $WLAc \times 0.53 = LTAc$.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*17) Long Term Average for human health numerical criteria (LTAh). WLAh numbers are multiplied by a multiplier specified in the "Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards" which is 1. $WLAh \times 1 = LTAh$.

If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then a blank shall appear in this column.

- (*18) Limiting Acute, Chronic or Human Health LTA's. The most limiting LTA is placed in this column. Units are consistent with the WLA calculation. If standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then the type of limit, Aquatic or Human Health (HH), is indicated.

- (*19) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 1.31 to determine the average WQBL ($LTA_{\text{limiting aquatic}} \times 1.31 = WQBL_{\text{monthly average}}$). If human health criteria was the most limiting criteria then $LTAh = WQBL_{\text{monthly average}}$. If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the chronic aquatic life criteria shall appear in this column depending on which is more limiting.

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- (*20) End of pipe Water Quality Based Limit (WQBL) daily maximum in terms of concentration, ug/L. If aquatic life criteria was the most limiting LTA then the limiting LTA is multiplied by 3.11 to determine the daily maximum WQBL ($LTA_{\text{limiting aquatic}} \times 3.11 = WQBL_{\text{daily max}}$). If human health criteria was the most limiting criteria then LTAh is multiplied by 2.38 to determine the daily maximum WQBL ($LTA_{\text{limiting aquatic}} \times 2.38 = WQBL_{\text{daily max}}$). If water quality standards are being applied at end-of-pipe, such as in the case of certain TMDL's, then either the human health criteria or the acute aquatic life criteria shall appear in this column depending on which is more limiting.
- (*21) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. The mass limit is determined by using the mass balance equations above. Monthly average WQBL, ug/l/1000 X facility flow, MGD X 8.34 = monthly average WQBL, lbs/day.
- (*22) End of pipe Water Quality Based Limit (WQBL) monthly average in terms of mass, lbs/day. Mass limit is determined by using the mass balance equations above. Daily maximum WQBL, ug/l/1000 X facility flow, MGD X 8.34 = daily maximum WQBL, lbs/day.
- (*23) Indicates whether the screened effluent value(s) need water quality based limits for the parameter of concern. A "yes" indicates that a water quality based limit is needed in the permit; a "no" indicates the reverse.

wqsmoan.wk4 Date: 03/10 Appendix B-1
 Developer: Bruce Fielding Time: 03:29 PM
 Software: Lotus 4.0 LA0033260; AI 19536
 Revision date: 02/14/05

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Water Quality Screen for Town of Jena

Input variables:

Receiving Water Characteristics:

Dilution:
 ZID Fs = 0.1
 Receiving Water Name= West Prong Hemphill Creek
 Critical flow (Qr) cfs= 1.35 MZ Fs = 1
 Harm. mean/avg tidal cfs= Critical Qr (MGD)= 0.872505
 Drinking Water=1 HHNPCR=2 Harm. Mean (MGD)= 0.872505
 Marine, 1=y, 0=n ZID Dilution = 0.941334
 Rec. Water Hardness= 25 MZ Dilution = 0.61606
 Rec. Water TSS= 3.2 HHnc Dilution= 0.61606
 Fisch/Specific=1,Stream=0 HHc Dilution= 0.61606
 Diffuser Ratio= ZID Upstream = 0.062322
 MZ Upstream = 0.623218
 MZhhnc Upstream= 0.623218

Toxicity Dilution Series:

Biomonitoring dilution: 0.61606
 Dilution Series Factor: 0.75

Percent Effluent

Dilution No. 1 82.141%
 Dilution No. 2 61.6060%
 Dilution No. 3 46.2045%
 Dilution No. 4 34.6534%
 Dilution No. 5 25.9900%

Partition Coefficients; Dissolved-->Total

Effluent Characteristics:

Permittee= Town of Jena
 Permit Number= LA0033260; AI 19536
 Facility flow (Qef),MGD= 1.4 MZhhnc Upstream= 0.623218
 ZID Hardness= ---
 MZ Hardness= ---
 ZID TSS= ---
 MZ TSS= ---
 Multipliers:
 WLAa --> LTAA 0.32
 WLAc --> LTAc 0.53
 LTA a,c-->WQBL avg 1.31
 LTA a,c-->WQBL max 3.11
 LTA h --> WQBL max 2.38
 WQBL-limit/report 2.13
 WLA Fraction 1
 WQBL Fraction 1
 Page Numbering/Labeling Appendix B-1
 Page Numbers 1=y, 0=n 1
 Input Page # 1=y, 0=n 1

METALS FW

Total Arsenic 1.6571
 Total Cadmium 4.43867
 Chromium III 4.645019
 Chromium VI 1
 Total Copper 2.407253
 Total Lead 4.533361
 Total Mercury 3.464206
 Total Nickel 1.807999
 Total Zinc 2.771964

Aquatic Life, Dissolved

Metal Criteria, ug/L

METALS	ACUTE	CHRONIC
Arsenic	339.8	150
Cadmium	7.067385	0.369319
Chromium III	176.3104	57.19328
Chromium VI	15.712	10.582
Copper	4.990833	3.757325
Lead	13.88217	0.540968
Mercury	1.734	0.012
Nickel	438.0648	48.65061
Zinc	35.35741	32.28667

Site Specific Multiplier Values:

CV = ---
 N = ---
 WLAa --> LTAA ---
 WLAc --> LTAc ---
 LTA a,c-->WQBL avg ---
 LTA a,c-->WQBL max ---
 LTA h --> WQBL max ---

Fischer/Site Specific inputs:

Pipe=1,Canal=2,Specific=3
 Pipe width, feet ug/L-->lbs/day Qef 0.011676
 ZID plume dist., feet ug/L-->lbs/day Qeo 0
 MZ plume dist., feet ug/L-->lbs/day Qr 0.011259
 HHnc plume dist., feet lbs/day-->ug/L Qeo 85.64577
 HHc plume dist., feet lbs/day-->ug/L Qef 85.64577
 diss-->tot 1=y0=n 1
 Cu diss-->tot 1=y0=n 1
 cfs-->MGD 0.6463

Fischer/site specific dilutions:

Dilution = --- Receiving Stream:
 F/specific MZ Dilution = --- Default Hardness= 25
 F/specific HHnc Dilution= --- Default TSS= 10
 F/specific HHc Dilution= --- 99 Crit., 1=y, 0=n 1

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Town of Jena
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(*1)	(*2)	(*3)	(*4)	(*5)	(*6)	(*7)	(*8)	(*9)	(*10)	(*11)
Toxic	Cu Effluent		Effluent	MQL Effluent	95th %		Numerical Criteria		HHNDW	HH
Parameters	Instream	/Tech	/Tech		I=No 95%	estimate	Acute	Chronic		Carcinogen
	Conc.	(Avg)	(Max)		0=95 %	Non-Tech	FW	FW		Indicator
	ug/L	ug/L	ug/L	ug/L		ug/L	ug/L	ug/L	ug/L	"C"
NONCONVENTIONAL										
Total Phenols (4AAP)				5			700	350	50	
3-Chlorophenol				10						
4-Chlorophenol				10			383	192		
2,3-Dichlorophenol				10						
2,5-Dichlorophenol				10						
2,6-Dichlorophenol				10						
3,4-Dichlorophenol				10						
2,4-Dichlorophenoxy-										
acetic acid (2,4-D)				---						
2-(2,4,5-Trichlorophen-										
oxy) propionic acid										
(2,4,5-TP, Silvex)				---						
METALS AND CYANIDE										
Total Arsenic				10			563.0827	248.5651		
Total Cadmium				1			31.36979	1.639285		
Chromium III				10			818.9653	265.6639		
Chromium VI				10			15.712	10.582		
Total Copper		17.1		10	0	36.423	12.0142	9.044835		
Total Lead				5			62.9329	2.452405		
Total Mercury		0.15		0.2	0	0.3195	6.006933	0.04157		
Total Nickel				40			792.0206	87.96024		
Total Zinc		139		20	0	296.07	98.00947	89.49751		
Total Cyanide				20			45.9	5.4	12844	
DIOXIN										
2,3,7,8 TCDD; dioxin				1.0E-05					7.2E-07	C
VOLATILE COMPOUNDS										
Benzene				10			2249	1125	12.5	C
Bromoform				10			2930	1465	34.7	C
Bromodichloromethane				10					3.3	C
Carbon Tetrachloride				10			2730	1365	1.2	C
Chloroform				10			2890	1445	70	C
Dibromochloromethane				10					5.08	C
1,2-Dichloroethane				10			11800	5900	6.8	C
1,1-Dichloroethylene				10			1160	580	0.58	C
1,3-Dichloropropylene				10			606	303	162.79	
Ethylbenzene				10			3200	1600	8100	
Methyl Chloride				50			55000	27500		
Methylene Chloride				20			19300	9650	87	C
1,1,2,2-Tetrachloro-										
ethane				10			932	466	1.8	C

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Town of Jena
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(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic	WLAa	WLAc	WLAh	LTaa	LTAc	LTah	Limiting	WQBL	WQBL	WQBL	WQBL	Need
Parameters	Acute	Chronic	HHNDW	Acute	Chronic	HHNDW	A,C,HH	Avg	Max	Avg	Max	WQBI
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	lbs/day	lbs/day	
NONCONVENTIONAL												
Total Phenols (4AAP)	743.6253	568.1263	81.16089	237.9601	301.1069	81.16089	81.16089	81.16089	193.1629	0.947635	2.25537	no
3-Chlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
4-Chlorophenol	406.8692	311.6578	---	130.1982	165.1786	---	130.1982	170.5596	404.9163	1.991454	4.727802	no
2,3-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,5-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,6-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
3,4-Dichlorophenol	---	---	---	---	---	---	---	---	---	---	---	no
2,4-Dichlorophenoc-	---	---	---	---	---	---	---	---	---	---	---	no
acetic acid (2,4-D)	---	---	---	---	---	---	---	---	---	---	---	no
2-(2,4,5-Trichlorophen-	---	---	---	---	---	---	---	---	---	---	---	no
oxy) propionic acid	---	---	---	---	---	---	---	---	---	---	---	no
(2,4,5-TP, Silvex)	---	---	---	---	---	---	---	---	---	---	---	no
METALS AND CYANIDE												
Total Arsenic	598.175	403.4752	---	191.416	213.8419	---	191.416	250.755	595.3038	2.927815	6.950767	no
Total Cadmium	33.32481	2.660916	---	10.66394	1.410286	---	1.410286	1.847474	4.385988	0.021571	0.051211	no
Chromium III	870.0046	431.2303	---	278.4015	228.5521	---	228.5521	299.4032	710.7969	3.495832	8.299265	no
Chromium VI	16.6912	17.17689	---	5.341184	9.103752	---	5.341184	6.996951	16.61108	0.081696	0.193951	no
Total Copper	12.76295	14.68174	---	4.084143	7.781321	---	4.084143	5.350227	12.70168	0.062469	0.148305	yes
Total Lead	66.85499	3.980787	---	21.3936	2.109817	---	2.109817	2.763861	6.561532	0.032271	0.076612	no
Total Mercury	6.381296	0.067478	---	2.042015	0.035763	---	0.035763	0.04685	0.111224	0.000547	0.001299	yes
Total Nickel	841.3807	142.7786	---	269.2418	75.67267	---	75.67267	99.1312	235.342	1.157456	2.747853	no
Total Zinc	104.1176	145.274	---	33.31763	76.9952	---	33.31763	43.6461	103.6178	0.509612	1.209842	yes
Total Cyanide	48.76057	8.765376	20848.61	15.60338	4.64565	20848.61	4.64565	6.085801	14.44797	0.071058	0.168694	no
DIOXIN												
2,3,7,8 TCDD; dioxin	---	---	1.17E-06	---	---	1.17E-06	1.17E-06	1.17E-06	2.78E-06	1.36E-08	3.25E-08	no
VOLATILE COMPOUNDS												
Benzene	2389.162	1826.12	20.29022	764.5317	967.8436	20.29022	20.29022	20.29022	48.29073	0.236909	0.563843	no
Bromoform	3112.603	2378.014	56.32566	996.0329	1260.348	56.32566	56.32566	56.32566	134.0551	0.657658	1.565227	no
Bromodichloromethane	---	---	5.356619	---	---	5.356619	5.356619	5.356619	12.74875	0.062544	0.148854	no
Carbon Tetrachloride	2900.138	2215.692	1.947861	928.0443	1174.317	1.947861	1.947861	1.947861	4.63591	0.022743	0.054129	no
Chloroform	3070.11	2345.55	113.6253	982.4352	1243.141	113.6253	113.6253	113.6253	270.4281	1.326688	3.157518	no
Dibromochloromethane	---	---	8.245947	---	---	8.245947	8.245947	8.245947	19.62535	0.09628	0.229146	no
1,2-Dichloroethane	12535.4	9576.985	11.03788	4011.327	5075.802	11.03788	11.03788	11.03788	26.27016	0.128878	0.30673	no
1,1-Dichloroethylene	1232.293	941.4664	0.941466	394.3338	498.9772	0.941466	0.941466	0.941466	2.24069	0.010993	0.026162	no
1,3-Dichloropropylene	643.767	491.835	264.2436	206.0054	260.6726	264.2436	206.0054	269.8671	640.6769	3.150969	7.480544	no
Ethylbenzene	3399.43	2597.149	13148.06	1087.818	1376.489	13148.06	1087.818	1425.041	3383.112	16.63878	39.50122	no
Methyl Chloride	58427.7	44638.49	---	18696.86	23658.4	---	18696.86	24492.89	58147.25	285.979	678.9272	no
Methylene Chloride	20502.81	15664.05	141.22	6560.899	8301.948	141.22	141.22	141.22	336.1035	1.648884	3.924344	no
1,1,2,2-Tetrachloro-	---	---	---	---	---	---	---	---	---	---	---	---
ethane	990.0839	756.4195	2.921792	316.8268	400.9023	2.921792	2.921792	2.921792	6.953865	0.034115	0.081193	no

TDS

(*1)	(*12)	(*13)	(*14)	(*15)	(*16)	(*17)	(*18)	(*19)	(*20)	(*21)	(*22)	(*23)
Toxic Parameters	WLAa Acute	WLAc Chronic	WLAh HHNDW	LTAa Acute	LTAc Chronic	LTAh HHNDW	Limiting A,C,HH	WQBL Avg	WQBL Max	WQBL Avg	WQBL Max	Need WQBL
	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	001 ug/L	001 ug/L	001 lbs/day	001 lbs/day	
Tetrachloroethylene	1370.395	1046.976	4.058045	438.5264	554.897	4.058045	4.058045	4.058045	9.658146	0.047382	0.112769	no
Toluene	1349.149	1030.743	74992.67	431.7276	546.294	74992.67	431.7276	565.5631	1342.673	6.603515	15.67705	no
1,1,1-Trichloroethane	5609.059	4285.295	---	1794.899	2271.206	---	1794.899	2351.318	5582.136	27.45398	65.17701	no
1,1,2-Trichloroethane	1912.179	1460.896	11.2002	611.8973	774.2749	11.2002	11.2002	11.2002	26.65648	0.130774	0.311241	no
Trichloroethylene	4143.055	3165.275	34.08758	1325.778	1677.596	34.08758	34.08758	34.08758	81.12843	0.398007	0.947256	no
Vinyl Chloride	---	---	58.1112	---	---	58.1112	58.1112	58.1112	138.3047	0.678506	1.614845	no
ACID COMPOUNDS												
2-Chlorophenol	274.079	209.3951	205.1747	87.70529	110.9794	205.1747	87.70529	114.8939	272.7634	1.341501	3.184786	no
2,4-Dichlorophenol	214.589	163.945	377.5605	68.66848	86.89085	377.5605	68.66848	89.95571	213.559	1.050323	2.493515	no
BASE NEUTRAL COMPOUNDS												
Benzidine	265.5804	202.9022	0.000276	84.98574	107.5382	0.000276	0.000276	0.000276	0.000657	3.22E-06	7.67E-06	no
Hexachlorobenzene	---	---	0.000406	---	---	0.000406	0.000406	0.000406	0.000966	4.74E-06	1.13E-05	no
Hexachlorobutadiene	5.417841	1.655682	0.178554	1.733709	0.877512	0.178554	0.178554	0.178554	0.424958	0.002085	0.004962	no
PESTICIDES												
Aldrin	3.186965	---	0.000649	1.019829	---	0.000649	0.000649	0.000649	0.001545	7.58E-06	1.8E-05	no
Hexachlorocyclohexane (gamma BHC, Lindane)	5.630305	0.340876	0.324644	1.801698	0.180664	0.324644	0.180664	0.23667	0.561865	0.002763	0.00656	no
Chlordane	2.549572	0.00698	0.000308	0.815863	0.003699	0.000308	0.000308	0.000308	0.000734	3.6E-06	8.57E-06	no
4,4'-DDT	1.168554	0.001623	0.000308	0.373937	0.00086	0.000308	0.000308	0.000308	0.000734	3.6E-06	8.57E-06	no
4,4'-DDE	55.77189	17.04379	0.000308	17.84701	9.033207	0.000308	0.000308	0.000308	0.000734	3.6E-06	8.57E-06	no
4,4'-DDD	0.03187	0.009739	0.000438	0.010198	0.005162	0.000438	0.000438	0.000438	0.001043	5.12E-06	1.22E-05	no
Dieldrin	0.252195	0.090413	8.12E-05	0.080702	0.047919	8.12E-05	8.12E-05	8.12E-05	0.000193	9.48E-07	2.26E-06	no
Endosulfan	0.233711	0.0909	1.038859	0.074787	0.048177	1.038859	0.048177	0.063112	0.149831	0.000737	0.001749	no
Endrin	0.091785	0.060871	0.422037	0.029371	0.032261	0.422037	0.029371	0.038476	0.091344	0.000449	0.001067	no
Heptachlor	0.552407	0.006168	0.000114	0.17677	0.003269	0.000114	0.000114	0.000114	0.00027	1.33E-06	3.16E-06	no
Toxaphene	0.775495	0.000325	0.00039	0.248158	0.000172	0.00039	0.000172	0.000225	0.000535	2.63E-06	6.25E-06	no
Other Parameters:												
Fecal Col.(col/100ml)	---	---	---	---	---	---	---	---	---	---	---	no
Chlorine	20.18411	17.8554	---	6.458916	9.46336	---	6.458916	8.461181	20.08723	0.098793	0.234538	no
Ammonia	---	6492.871	---	---	3441.222	---	3441.222	4508.001	10702.2	52.63542	124.9589	no
Chlorides	---	---	---	---	---	---	---	---	---	---	---	no
Sulfates	---	---	---	---	---	---	---	---	---	---	---	no
TDS	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no
	---	---	---	---	---	---	---	---	---	---	---	no

ICIS-NPDES Report
Monitoring Period: 1/1/08 - 12/31/09

Town of Jena-LA0033260										
MP End Date	Outfall	STORET Loc	Mon Loc	DMR Field	Parameter	Limit	DMR Value	Units	Vio Code	Rec'd
3/31/2008	001-Q	71900	1	Q1	Mercury, total (as Hg) --- MO AVG	.00048	<.0008	lb/d	E90	4/22/2008
5/31/2008	001-A	74055	1	C2	Coliform, fecal general --- MOAV GEO	200	321	#/100mL	E90	6/16/2008
6/30/2008	001-A	74055	1	C2	Coliform, fecal general --- MOAV GEO	200	298	#/100mL	E90	7/21/2008
6/30/2008	001-A	74055	1	C3	Coliform, fecal general --- WKAV GEO	400	412	#/100mL	E90	7/21/2008
6/30/2008	001-Q	01092	1	Q1	Zinc, total (as Zn) --- MO AVG	1.619	2.04	lb/d	E90	7/21/2008
6/30/2008	001-Q	71900	1	Q1	Mercury, total (as Hg) --- MO AVG	.00048	<.0008	lb/d	E90	7/21/2008
9/30/2008	001-Q	01042	1	Q1	Copper, total (as Cu) --- MO AVG	.206	.166	lb/d	D90	12/2/2008
9/30/2008	001-Q	01042	1	Q2	Copper, total (as Cu) --- DAILY MX	.49	.212	lb/d	D90	12/2/2008
9/30/2008	001-Q	01092	1	Q1	Zinc, total (as Zn) --- MO AVG	1.619	1.629	lb/d	E90	12/2/2008
9/30/2008	001-Q	71900	1	Q1	Mercury, total (as Hg) --- MO AVG	.00048	<.0002	lb/d	D90	12/2/2008
9/30/2008	001-Q	71900	1	Q2	Mercury, total (as Hg) --- DAILY MX	.0011	<.0002	lb/d	D90	12/2/2008
12/31/2008	001-Q	71900	1	Q1	Mercury, total (as Hg) --- MO AVG	.00048	<.15	lb/d	E90	1/23/2009
12/31/2008	001-Q	71900	1	Q2	Mercury, total (as Hg) --- DAILY MX	.0011	<.15	lb/d	E90	1/23/2009
6/30/2009	001-Q	71900	1	Q1	Mercury, total (as Hg) --- MO AVG	.00048	=.00054	lb/d	E90	7/20/2009
12/31/2009	001-A	80082	1	C3	BOD, carbonaceous, 05 day, 20 C --- WKLY AVG	15	=15.1	mg/L	E90	1/28/2010
12/31/2009	001-Q	01042	1	Q1	Copper, total (as Cu) --- MO AVG	.206	Not Received	lb/d	D90	
12/31/2009	001-Q	01042	1	Q2	Copper, total (as Cu) --- DAILY MX	.49	Not Received	lb/d	D90	
12/31/2009	001-Q	01092	1	Q1	Zinc, total (as Zn) --- MO AVG	1.619	Not Received	lb/d	D90	
12/31/2009	001-Q	01092	1	Q2	Zinc, total (as Zn) --- DAILY MX	6.842	Not Received	lb/d	D90	
12/31/2009	001-Q	71900	1	Q1	Mercury, total (as Hg) --- MO AVG	.00048	Not Received	lb/d	D90	
12/31/2009	001-Q	71900	1	Q2	Mercury, total (as Hg) --- DAILY MX	.0011	Not Received	lb/d	D90	
12/31/2009	TX1-Q	22414	1	C1	Whole effluent toxicity --- MO AV MN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	22414	1	C2	Whole effluent toxicity --- 7 DA MIN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TGP3B	1	C1	Pass/Fail Statre 7Day Chronic Ceriodaphnia --- MO AV MN	Report	Not Received	pass=0/fail=1	D80	
12/31/2009	TX1-Q	TGP3B	1	C2	Pass/Fail Statre 7Day Chronic Ceriodaphnia --- 7 DA MIN	Report	Not Received	pass=0/fail=1	D80	
12/31/2009	TX1-Q	TGP6C	1	C1	Pass/Fail Statre 7Day Chronic Pimephales Promelas --- MO AV MN	Report	Not Received	pass=0/fail=1	D80	
12/31/2009	TX1-Q	TGP6C	1	C2	Pass/Fail Statre 7Day Chronic Pimephales Promelas --- 7 DA MIN	Report	Not Received	pass=0/fail=1	D80	
12/31/2009	TX1-Q	TLP3B	1	C1	LF Pass/Fail Leth Statre 7Day Chronic Ceriodaphnia --- MO AV MN	Report	Not Received	pass=0/fail=1	D80	
12/31/2009	TX1-Q	TLP3B	1	C2	LF Pass/Fail Leth Statre 7Day Chronic Ceriodaphnia --- 7 DA MIN	Report	Not Received	pass=0/fail=1	D80	
12/31/2009	TX1-Q	TLP6C	1	C1	LF Pass/Fail Leth Statre 7Day Chronic Pimephales --- MO AV MN	Report	Not Received	pass=0/fail=1	D80	

ICIS-NPDES Report
Monitoring Period: 1/1/08 - 12/31/09

Town of Jena-LA0033260										
MP End Date	Outfall	STORET	Mon Loc	DMR Field	Parameter	Limit	DMR Value	Units	Vio Code	Rec'd
12/31/2009	TX1-Q	TLP6C	1	C2	LF Pass/Fail Leth Statre 7Day Chronic Pimephales --- 7 DA MIN	Report	Not Received	pass=0/fail=1	D80	
12/31/2009	TX1-Q	TOP3B	1	C1	Noel Lethal Statre 7Day Chronic Ceriodaphnia --- MO AV MN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TOP3B	1	C2	Noel Lethal Statre 7Day Chronic Ceriodaphnia --- 7 DA MIN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TOP6C	1	C1	Noel Lethal Statre 7Day Chronic Pimephales --- MO AV MN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TOP6C	1	C2	Noel Lethal Statre 7Day Chronic Pimephales --- 7 DA MIN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TPP3B	1	C1	Noel Sub-Lth Statre 7Day Chronic Ceriodaphnia --- MO AV MN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TPP3B	1	C2	Noel Sub-Lth Statre 7Day Chronic Ceriodaphnia --- 7 DA MIN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TPP6C	1	C1	Noel Sub-Lth Statre 7Day Chronic Pimephales --- MO AV MN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TPP6C	1	C2	Noel Sub-Lth Statre 7Day Chronic Pimephales --- 7 DA MIN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TQP3B	1	C1	Coef Of Var Statre 7Day Chronic Ceriodaphnia --- MO AV MN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TQP3B	1	C2	Coef Of Var Statre 7Day Chronic Ceriodaphnia --- 7 DA MIN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TQP6C	1	C1	Coef Of Var Statre 7Day Chronic Pimephales --- MO AV MN	Report	Not Received	%	D80	
12/31/2009	TX1-Q	TQP6C	1	C2	Coef Of Var Statre 7Day Chronic Pimephales --- 7 DA MIN	Report	Not Received	%	D80	

MEMORANDUM

TO: Eura DeHart

FROM: Todd Franklin

DATE: July 27, 2009

RE: Stream Flow and Water Quality Characteristics for the West Prong Hemphill Creek, receiving waters for the Town of Jena / Jena/LaSalle Regional Wastewater Treatment Plant
Permit No. LA0033260, AI: 19536

Determination of the water quality characteristics for Outfall 001 was taken from random site number 2257 (West Prong Hemphill Creek in Jena at the bridge on LA Highway 127). The following TSS and hardness results were obtained from five separate samples.

Average hardness = 25 mg/l
15th percentile TSS = 3.2 mg/l

The discharge is into West Prong Hemphill Creek. According to a memo from Max Forbes to Susan Larrowe dated March 5, 1993, the 7Q10 at the site was determined to be 1.35 cfs. Since the time of the determination, there have been no significant changes to the hydrology of the receiving stream; therefore, the 7Q10 value of 1.35 cfs should be used for permit limitation calculations.

If you have additional questions or comments, please contact me at 2-3102.

BIOMONITORING FREQUENCY RECOMMENDATION AND RATIONALE FOR ADDITIONAL REQUIREMENTS

Permit Number: **LA0033260**
 Facility Name: **Town of Jena - Jena/LaSalle Regional WWTP**
 Previous Critical Biomonitoring Dilution: **62%**
 Proposed Critical Dilution Biomonitoring: **62% (WET limit)**
 Date of Review: **9/25/09**
 Name of Reviewer: **Laura Thompson**

Recommended Frequency by Species:

Pimephales promelas (Fathead minnow): **Once / Quarter¹**
Ceriodaphnia dubia (water flea): **Once / Quarter¹**

Recommended Dilution Series: **26%, 35%, 46%, 62%, and 82%**

Number of Tests Performed during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **19**
Daphnia pulex (water flea): **N/A – Testing of species was not required**
Ceriodaphnia dubia (water flea): **19**

Number of Failed Tests during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **3 lethal, 4 sub-lethal**
Daphnia pulex (water flea): **N/A – Testing of species was not required**
Ceriodaphnia dubia (water flea): **3 lethal, 3 sub-lethal**

Failed Test Dates during previous 5 years by Species:

Pimephales promelas (Fathead minnow): **Testing periods of: 1/1/08-3/31/08 (sub-lethal); 4/1/08-6/30/08 (lethal & sub-lethal); 7/1/08-9/30/08 (lethal & sub-lethal); 8/1/08-8/30/08 (lethal & sub-lethal)**
Daphnia pulex (water flea): **N/A – Testing of species was not required**
Ceriodaphnia dubia (water flea): **Testing periods of: 4/1/08-6/30/08 (lethal & sub-lethal); 7/1/08-9/30/08 (lethal & sub-lethal); 8/1/08-8/30/08 (lethal & sub-lethal)**

Previous TRE Activities: **N/A – No previous TRE Activities**

¹ This facility will have a three year compliance schedule to meet toxicity testing requirements implemented into the permit renewal. The biomonitoring frequency shall be quarterly for the life of the permit.

FRESHWATER CHRONIC

Additional Requirements (including WET Limits) Rationale / Comments Concerning Permitting:

The Town of Jena - Jena/LaSalle Regional WWTP owns and operates an existing publicly owned treatment works serving the Town of Jena and the LaSalle Sewer District No. 1 in Jena, LaSalle Parish, Louisiana. LPDES Permit LA0033260, effective January 1, 2005, contained freshwater chronic biomonitoring as an effluent characteristic of Outfall 001 for *Ceriodaphnia dubia* and *Pimephales promelas*. The effluent series consisted of 26%, 35%, 46%, 62%, and 82% concentrations, with the critical dilution being defined as the 62% effluent concentration. The testing was to be performed quarterly. Data on file indicate that the permittee has experienced 3 lethal and 3 sub-lethal failures to the *Ceriodaphnia dubia*, and 3 lethal and 4 sub-lethal failures to the *Pimephales promelas* during the last five years.

This facility has experienced several lethal and sub-lethal biomonitoring test failures during the previous permit cycle. A reasonable potential analysis also shows that reasonable potential for future lethal and sub-lethal toxicity exists for the Town of Jena - Jena/LaSalle Regional WWTP. LDEQ does not recommend a Whole Effluent Toxicity (WET) Limit be implemented immediately upon permit reissuance. Rather, LDEQ recommends that a three year compliance schedule be incorporated into LA0033260. The purpose of this compliance schedule is to attain compliance with the WET limit. After this three year period expires, the WET limit stated in Part I of LA0033260 shall become effective.

It is recommended that freshwater chronic biomonitoring be an effluent characteristic of Outfall 001 (1.4 mgd of treated sanitary wastewater) in LA0033260. The effluent dilution series shall be 26%, 35%, 46%, 62%, and 82% concentrations, with 62% being defined as the critical biomonitoring dilution and/or WET limit. The biomonitoring frequency shall be once per quarter for *Ceriodaphnia dubia* and *Pimephales promelas* for the term of the permit.

This recommendation is in accordance with the LDEQ/OES Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, Water Quality Management Plan Volume 3. Version 6 (April 16, 2008), and the Best Professional Judgment (BPJ) of the reviewer.

Facility Name	Town of Jena - Jena/LaSalle WWP	
Type of Testing	Chronic Freshwater	
LPDES Permit Number	LA0033260	
Proposed Critical Dilution	62	* Critical Dilution in draft permit, do not

Outfall number	1
----------------	---

* Critical Dilution in draft permit, do not use % sign.

Test Data

Enter data in yellow shaded cells only. Fifty percent should be entered as 50.

[illegible]

Reasonable Potential Analysis for WET

Page 2

Facility Name Town of Jena - Jena/LaSalle WWP
 Type of Testing Chronic Freshwater
 LPDES Permit Number LA0033260 Outfall number 1
 Proposed Critical Dilution 62 * Critical Dilution in draft permit, do not use % sign.

Test Data

Enter data in yellow shaded cells only. Fifty percent should be entered as 50.

Date (dd/mm/yy)	Vertebrate				Invertebrate			
	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU	Lethal NOEC	Sublethal NOEC	Lethal TU	Sublethal TU

Min NOEC Observed

26

25

25

25

TU at Min Observed

3.85

4.00

4.00

4.00

Count

19

19

Count

19

19

Mean

1.567

1.840

Mean

1.590

1.619

Std. Dev.

0.877

1.061

Std. Dev.

1.057

1.076

CV

0.6

0.6

CV

0.7

0.7

RPMF

1.4

1.4

1.5

1.5

1.000

Reasonable Potential Acceptance Criteria.

3.338

Reasonable Potential exists, Permit requires WET monitoring and WET limi

Vertebrate Lethal

Vertebrate Sublethal

3.472

Reasonable Potential exists, Permit requires WET monitoring and WET limi

Invertebrate Lethal

3.720

Reasonable Potential exists, Permit requires WET monitoring and WET limi

Invertebrate Sublethal

3.720

Reasonable Potential exists, Permit requires WET monitoring and WET limi

NOTES:

Where toxicity was so great in a test that all effluent dilutions failed and the NOEC was reported as zero percent effluent dilution ("0"), the Reasonable Potential calculation was performed substituting the next lower whole number of the lowest concentration of effluent tested ("25"). This results in the introduction of some bias in the permittee's favor.

PRETREATMENT EVALUATION AND RECOMMENDATION

FACILITY NAME: *Town of Jena WWTP*

CITY: *Jena*

PARISH: *La Salle*

PERMIT #: *LA0033260*

DESIGN FLOW: *1.4 MGD*

ESTIMATED OR EXPECTED TREATED WASTEWATER FLOW: *0.689 MGD*

OTHER POTWs IN SYSTEM: *N/A*

INDUSTRIES LISTED IN 2010 DIRECTORY OF LOUISIANA MANUFACTURERS AND/OR LPDES PERMIT APPLICATION:

Industry Name	Type of Industry	Direct or Indirect Discharger
Dresser-Rand Services Inc.	Oil and gas well building, repairing, and dismantling service	Indirect ¹
Jena Choctaw Enterprises	Manufactures computers	N/A ²
Jena Times	Publishes and prints newspapers	Indirect ¹
T K Stanley Inc.	Oil and gas well building, repairing, and dismantling service	N/A ²
Texas Industries Inc.	Steel mill; sand mining; manufactures hydraulic cement; manufactures standard concrete or cinder blocks; manufactures ready-mixed concrete; manufactures concrete pipe	N/A ²

STANDARD LANGUAGE RECOMMENDATION AND JUSTIFICATION:

Due to the absence of pretreatment categorical standards for the indirect discharges listed above or because the discharge is of sanitary wastewater only, it is recommended that LDEQ Option 1 Pretreatment Language be included in LPDES Permit LA0033260. This language is established for municipalities that do not have either an approved or required Pretreatment program. This recommendation is in accordance with 40 CFR Part 403 regulations, the General Pretreatment Regulations for Existing and New Sources of Pollution contained in LAC Title 33, Part IX, Chapter 61 and the Best Professional Judgement (BPJ) of the reviewer.

¹ The discharge is sanitary wastewater only.

² This facility is not connected to the Town of Jena WWTP.

Melissa Reboul – 12/17/2009